A NEW SPECIES OF, AND OBSERVATIONS ON, THE GENUS SMALLANTHUS (ASTERACEAE - HELIANTHEAE)

B.L. TURNER

Department of Botany, Univ. of Texas, Austin, TX 78713, U.S.A.

The well-known genus Polymnia L. was treated by Wells (1965) as comprised of 19 species, most of which were confined to Mexico, Central and South America. Robinson (1978), following the suggestions of earlier workers, redefined the genus, restricting Polymnia to but 2 species endemic to the eastern U.S.A. and adjacent Canada; the remainder of the species were positioned in Smallanthus Mackenzie. Indeed, Robinson (1981) was so certain of the phyletic distance between the two taxa that he erected the monotypic subtribe Polymniinae to house Polymnia, positioning Smallanthus in the subtribe Melampodiinae. While I cannot subscribe to his subtribal views, careful examination of the characters emphasized by Robinson, and comparison of these with yet other characters of related genera, strongly suggests that 2 genera are envolved. At least they are as distinct from each other as are the genera Trigonospermum (base chromosome number, x = 15) and Sigesbeckea (x = 15), and it might be that Polymnia stands as close to the latter two genera as it does to Smallanthus (x = 16 or 8?), the latter of which appears as close to Rumfordia (x = 24 or 8?) is it does to Polymnia.

In any case, we will treat Smallanthus as a good genus in our forthcoming treatment of the Asteraceae of Mexico (Turner & Nesom, in prep.). In the present study of Smallanthus I have had occasion to consider the relationship of S. uvedalius of the southeastern U.S.A. (Wells, 1965) to that of S. maculatus, which has heretofore been treated as a distinct species of Mexico and Central America. After examination of numerous specimens throughout the range of both taxa, I conclude that there are no characters, or combination of characters, that will adequately separate them. Wells used achene size to distinguish between these (achenes greater than 5 mm long and 4 mm wide in S. uvedalius, versus less that 5 mm long and 4 mm wide in S. maculatus). But achene size is a very inconstant character and varies throughout the range of the putative species. In fact, while both Blake (1917) and Wells (1965) recognized several varieties under these two species. I cannot recognize but a single variable species, as shown in Fig 1. This conclusion is nicely affirmed by Wells who comments upon the presence of 3 varieties of Smallanthus uvedalius on the island of Bermuda, all apparantly derived from a single introduction from the mainland sometimes between 1883-1905. He states, "Thus the presence of three varieties there probably must be explained by mutation or segregation in the island". Clearly the morphological expressions of this species are easily shifted, given novel conditions. In my opinion, the submergence of the names concerned is long overdue.

Among the specimens of Smallanthus annotated by Wells as Polymnia maculata, I have been able to segregrate a number of sheets from Chiapas, Mexico, which I think constitute an undescribed species of Smallanthus which I describe here.

SMALLANTHUS OBSCURUS B. Turner, sp. nov.

Smallanthus uvedalius (L.) Mackinzie simile sed foliis profunde trilobis, caulibus dense glanduloso-pubescentibus non maculosis, et involucri bracteis externis ovatis superficiebus abaxialibus grosse pubescentibus aliquando glandiferis differt.

Robust perennial herbs 1-2 m high; stems reddish or brownish, densely glandular-pubescent, a few longer non-glandular trichomes often interspersed; leaves mostly 12-20 cm long, 8-16 cm wide; petioles 4-10 cm long, winged throughout, auriculate at the base; blades deeply 3-lobed, the venation palmate, usually coarsely reticulate-beneath and moderately to densely pubescent, rarely not, the surface atomiferous glandular; heads radiate, 2-10, in loose terminal cymules; involucres mostly 10-14 mm high, the outer bracts ovate, either roughly hispid-pubescent or with glandular-trichomes, or both, on the abaxially faces, the inner bracts somewhat smaller but pubescent like the outer; ray florets mostly 8-11, the ligules yellow, 8-12 mm long; disk florets numerous, the corollas yellow with pubescent lobes; achenes broadly obovate in outline, 4-5 mm high, 3-4 mm wide.

TYPE: MEXICO. OAXACA: Mcpio. San Cristobal Las Casas, along road to Chanal, 16-20 km E of Chilil, 2380 m, 10 Nov 1976, D.F. Breedlove 42387 (holotype TEX; isotype CAS).

ADDITIONAL SPECIMENS EXAMINED: OAXACA. Mcpio. Amatenango del Valle: "grassy floor at Amatenango del Valle", 5800 ft, 7 Jul 1966, Breedlove 14427 (LL, NY); "in the sitios of Amatenango del Valle", 5900 ft, 27 Jul 1966, Breedlove 14658 (NY); S of center of Amatenango del Valle, 5900 ft, 5 Sep 1966, Ton 1072; Amatenago del Valle, 5800 ft, 26 Sep 1966, Ton 1232. San Cristobal Las Casas: SW slope of Muk'ta vits, 2480 m, 7 Nov 1976, Breedlove 41298 (LL); NE edge of San Cristobal Las Casas, 2250 m, 20 Sep 1981, Breedlove 52950 (NY, TEX); 4-7 W of San Cristobal, 2100 m, 16 Oct 1980, Breedlove & Strother 46340, 46353. Mcpio. Huistan: "steep slope with Pinus and Quercus below Huistan, 2133 m, 30 Aug 1981, Breedlove 52464. Mcpio. Ixtapa: along the trail from Zinacantan Center to Ixtapa, 4000 ft, 17 Jun 1966, Laughlin 1099 (NY). Mcpio. Pueblo Nuevo Solistahuacan: 3 km NW of Pueblo Nuevo Solistahuacan, 5800 ft, 5 Aug 1970, Mill 259 (TEX). Mcpio. San Andres Larrainzar: near summit of Chuchil Ton, NE of Bochil, 2700 m, 17 Oct 1972, Breedlove 29299 (TEX). Mcpio. Teopisca: S edge of Teopisca, 5900 ft, 13 Oct 1965, Breedlove & Raven 13091 (LL, NY); 5 km SW of Teopisca, 1750 m, 27 Nov 1976, Breedlove 41859 (LL).

This taxon is distinguished by its deeply 3-lobed leaves, glandular-pubescent stems, ovate outer involucral bracts which are glandular-pubescent or coarsely hispidulous, or both, on the abaxial surfaces, and 8-11 ray florets with yellow ligules. It seemingly combines features of both Smallanthus oaxacanus and S. uvedalius and is perhaps an ancestral hybrid derivitive of these two species. I do not believe these to be, in situ, newly spawned hybrids since S. obscurus has not been collected at any one site with any of their putative parents, nor does there appear to be anything but fertile achenes on S. obscurus. As shown in Fig. 1, however, the latter taxon is known to occur in a region where both S. oaxacanus and S. uvedalius occurs and it is possible that what I have described here as new is, in fact, a remarkable series of rather uniform hybrids between these, neither parent of which was collected at the site concerned by the collectors cited. Indeed, one of the collections cited above (Breedlove 29299) appears to approach S. uvedalius in characters of the involucre and this might prove to be a hybrid derivitive of S. uvedalius x S. obscurus. This might also be true for Breedlove & Strother 46353, which appears to approach S. uvedalius in characters of the involucre but this is only an approach; Breedlove & Strother 46340, collected at the same site, is typical S. obscurus. Apparantly S. maculatus was not colleted at this locality by the collectors concerned.

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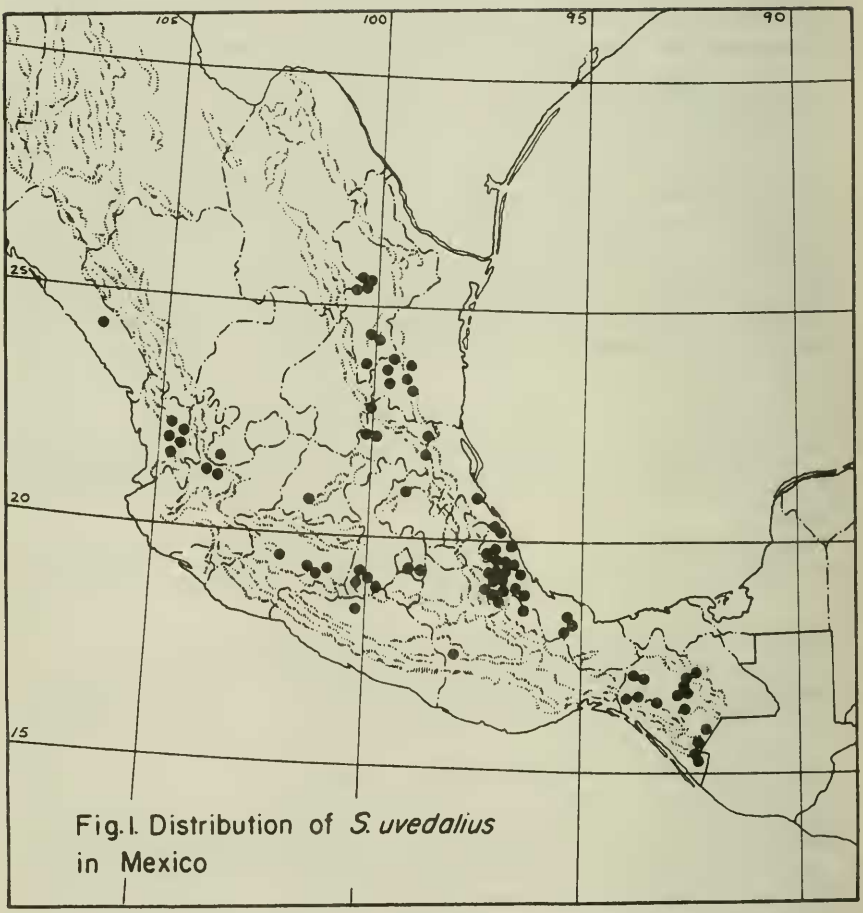

Fig. 1. Distribution of *S. uvedalius* in Mexico

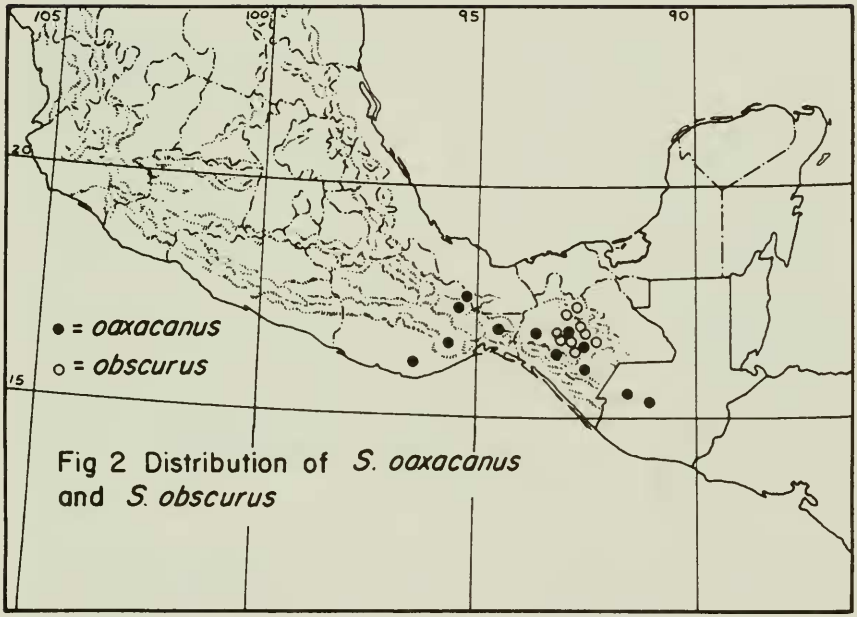

Fig 2 Distribution of *S. oaxacanus* and *S. obscurus*